

Some New Species of the Genus *Volucella*

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Recent studies of American Syrphid flies have disclosed a number of species of *Volucella* which appear to be undescribed. This paper presents the descriptions of these species. The types are in the author's collection.

Volucella belinda n. sp.

A greenish to bluish black species. Related to *pinkusi* Curran but distinct in the reddish brown ground color of the face and the black first abdominal segment. The mesonotal pile is chiefly black in front of the suture. Length 10 mm.

Male. *Head*: the face and cheeks are reddish brown, separated by a distinct black stripe. The upper part of the face is black, bearing yellowish white pollen. Pile of face yellowish white; front black with black pile; vertical pile black. The antennae are reddish brown, the elongate third segment gradually and uniformly tapering until it is distinctly narrow apically; it is faintly darker dorsally and apically. The arista is yellowish basally, black apically, with twenty-four long rays. Eyes not flattened, the upper facets but little enlarged. Ocular pile light reddish brown to brownish yellow, quite thick and abundant above and extending nearly to the bottom of the eye. *Thorax*: the mesonotum and scutellum are black with extremely strong opalescent greenish reflection which becomes coppery to purple where the light strikes it. The pile of the mesonotum is chiefly black and very fine and abundant. There is considerable pale pile however, just behind and medial to the humeri and viewed from the rear there is an obscure but rather broad stripe of scattered yellowish white hairs mixed in with black along the lateral margin of the mesonotum. There may be discerned in some specimens slender linear stripes of pale pile, three in number lying anteriorly on the middle of the mesonotum. There is some short pale pile on the posterior half of the mesonotum mixed in with the long black pile. Notopleura shining black, the upper wing mar-

gins and the lateral margin just medial to the notopleura also shining black. Humeri brown, post calli brown, the scutellum with a distinct, complete, preapical depression but no basal flattened areas. The depression is granulate. The pleura are shining black and black pilose. The bristles of the thorax are black; there is one on the mesopleura, four on the notopleura, three above wing, three on post calli, none in front of the scutellum and from eight to ten upon the scutellar margin. The ventral scutellar fringe is black; squamae dark brown, the fringe and border similar. *Legs*: quite black, only the extreme apex of the anterior and middle femora and extreme base of their tibiae dark brown; pile of legs black. *Wings*: strongly tinged with brown, fading away into a lighter brown along the posterior margin. There is a slight trace of yellowish color mingled with the brown in the costal cell, the first basal cell and the stigmal portion of the subcostal cell which is broken by a minute, diagonal, brown line. Marginal cell narrowly closed. *Abdomen*: first segment quite black, the remaining segments bright shining bluish or green; the pile is thick, abundant and yellowish white, except narrowly along the posterior margin of the second segment, more widely along the posterior margin of the third segment, and, except for a few black hairs on the apex of the fourth segment. Hypopygium black and black pilose. All the sternites metallic bluish cell widely open.

Female. Similar to the male, the front polished shining black with shallow concave depression across the middle. Marginal cell widely open.

Holotype: male, *allotype*, female, one male paratype and four female paratypes all from Nova Teutonia, BRASIL, collected by Fritz Plaumann, Jan.-April, 1948.

Volucella opeostoma n. sp.

Very similar to *pica* Schiner but distinct in the direction of the conical epistoma which points downward and not forward; also in the lack of black vittae upon the thorax, the absence of the wide black bands upon the abdomen and with a differently shaped antennae. Length 10.3 mm.

Female. *Head*: face pointed downward and a little forward into a very long narrow cone. The face is light brownish yellow in color with a diffuse brown stripe proceeding from the eye margin about the middle of the face nearly to the apex of the cone. Front pale yellow and narrow with black pile and the pile of the vertex black. The short sparse facial pile is golden. The antennae are pale orange, the third segment elongate, concave dorsally just beyond the middle and the apex swollen and slightly bulbous. The arista is yellow becoming blackish towards the apex with about sixteen dorsal rays. Pile of eyes distinctly yellow. *Thorax*: mesonotum pale reddish to brownish yellow with four subopaque reddish stripes of about the same color as the remainder of the mesonotum. The scutellum is concolorous with mesonotum and both subtranslucent. The pile of the scutellum dense and short and black on the disc with a few longer hairs and with a wide band of thick golden pile on the base. Scutellar margin three pairs of strong but long and slender black bristles. Post calli with three pairs of black bristles, base of wing with three, ontopleura with two, mesopleura with one black bristle. The anterior margin of the mesopleura is blackish on half the width except at the upper portion. The sternopleura and hypopleura are black except for the anterior portion of the hypopleura and the upper margin of the sternopleura. The coxae are dark brown on the anterior pair, black upon the remaining pairs and their trochanters, and black pilose. Squamae pale yellow with yellow fringe. *Legs*: femora and tibiae pale yellow, the tarsi orange. The hind tibiae with a distinct, rather wide, black annulus in the middle. This ring is blackish pilose and the femora and tibiae are of a deeper and more reddish color than in *pica*. *Wings*: tinged with brown on the anterior border including the costal and basal cells. *Abdomen*: entire abdomen a bright clear, rich, brownish orange and subtranslucent without any black borders upon the posterior margins of the segments but with a wide band of thick black pile on the posterior margin of the second segment, a still wider one on the posterior margin of the third segment which expands into a triangle in the middle of the segment, reaching almost to the base, and which expands narrowly along

the side margin almost to the base. Fourth segment with a large, triangular patch of black pile in the middle posteriorly reaching almost to the base, but none upon the lateral margins. This black pile is subappressed and the remaining pile elsewhere is bright golden red and subappressed.

Holotype: female, Bambito, Volcan, Chiriqui, PANAMA, Dec. 1946, collected by N. H. L. Krauss and presented to the author.

Volucella sappho n. sp.

A reddish brown species related to *correcta* Curran but distinguished by the pale brownish yellow to yellowish white pile of the eyes in both sexes. In both sexes of *correcta* the ocular pile is described as black. Length 8.5 mm.

Male. *Head*: face short, dark shining brownish red with yellowish pollen confined to the region beneath the antennae but reaching the eyes. Face with a few reddish brown or yellowish hairs on the side. The facial tubercle is low and scarcely darker in the middle. The front is very small and very dark brown with a few pale yellow hairs. The vertex is also reduced until it is practically non-existent in front of the anterior ocellus and behind the posterior ocellus; its pile is black. Eyes enormously developed, flattened from vertex to front with greatly enlarged facets and with moderately long pale brownish to yellowish white pile. Antennae reddish brown throughout, the third segment very slightly concave. Arista yellowish brown basally, dark brown to nearly black apically with twenty-one long rays above. *Thorax*: mesonotum and scutellum deep dark reddish brown, the margin of the scutellum perhaps slightly darker. The humeri, notopleura and the anterior margin of the pleura and the hypopleura, metapleura and posterior pteropleura only slightly lighter in shade. Disc of scutellum opaque with sparse, fine black pile and three pairs of strong marginal black bristles. Ventral fringe blackish. Squamae very dark brown with similar fringe and border; halteres yellowish with an opaque, quite white knob. Pile of mesonotum distinctly yellow on the anterior two-thirds, becoming dark reddish brown above the wing; it is black in front of the scutellum. There are no prescutellar bristles but the pile

is a little longer and coarser before the scutellum. There are three black bristles on the post calli, three supraalae, two notopleura and one mesopleura. Pleural pile narrowly blackish above becoming dark brown and then reddish brown below. *Legs*: reddish brown, made darker by the very dark brown pile, which is brown rather than black. The tarsal segments are extremely dark brown but not black. The hind basitarsi and the middle basitarsi are more reddish brown. *Wings*: uniformly tinged with pale yellowish brown, the costal cell more yellowish and the stigmal area yellowish with elongate, diffuse, brown basal stigmal spot. Marginal cell closed at the costa. Radial sector with seven long black bristles. *Abdomen*: first and second segments translucent light brownish yellow, the second becoming narrowly and diffusely darker or more reddish brown along the posterior margin, but the difference in shade is slight. Third segment obscurely yellowish on either side at the base and extending diffusely down nearly half the length of the segment except at the sides and the middle where somewhat darker brown prevails. Fourth segment similar to the third. Pile of the abdomen everywhere dark brownish black except upon the first segment where it is yellow and upon the anterior corners of the second where it is reddish. First and second sternites and the third sternite narrowly along the base on either side of the middle light translucent yellow; remainder reddish brown.

Female. Similar to the male in general. The front is black with a shallow, transverse depression upon the lower part of the front; there are longitudinal depressions along the eye margin, above the transverse depression, and there is an extremely faint medial depression on the upper part of the front. There is a more evident, medial, somewhat groove-like depression in the middle of the preantennal callus; this groove separates two slightly convex, low bullate eminences. Below these swellings there is on either side a diagonal crease immediately in front of the antennae. Scutellum more distinctly yellowish brown basally, darker posteriorly. First and second segments of the abdomen, their sternites, and the narrow anterior border of the third sternite very pale translucent yellow. Posterior half of

the second tergite widely black with opalescent bluish reflection, a little wider sublaterally and then diminishing to the sides where the black does not actually reach the posterior corners. Third tergite entirely of the same opalescent bluish black. Fourth and fifth similar except that there are a pair of obscure, elongate, large, yellowish brown, transverse spots on the basal margin.

Holotype: male, Summit, PANAMA, Canal Zone, Oct. 1946, *allotype*, female, Barro Colorado Island, PANAMA, Jan. 1947, presented to the author by N. L. H. Krauss.

***Volucella vitrea* n. sp.**

A black species with opalescent reflections which are somewhat faint; face yellow with distinct reddish to brownish tinge. Related to *vitripennis* Curran. The scutellum is quite black, not dark red in ground color. The scutellum has three pairs of marginals instead of four and there are six prescutellars instead of twelve. Finally the basal halves of the abdominal tergites are not reddish in ground color; the whole abdomen is black. Length 10 mm.

Female. *Head*: the cheeks are light reddish brown becoming black behind at the lowest part of the eye. The face is light brownish yellow with a large low tubercle; it is black pilose on the tubercle, with abundant yellow pile and yellow pubescence on the sides and beneath the antennae. This pubescence and pile extends narrowly up the sides of the polished black front. The front is distinctly convex from posterior or anterior view. The vertex and occiput are black, their pile pale yellow, except for a single row of short, sharp, stiff black hairs upon the upper third of the occiput. Occipital pollen light brownish yellow. All frontal pile yellow except a few black hairs. Ocular pile dense, fine, distinctly yellow and rather short. Antennae orange brown on the first, second and the basal half of the elongate third segment. Third segment much narrowed on the outer two-fifths. This section of the antenna has nearly parallel sides and rounded apex and is dark smoky brown. The arista is nearly black with dark brown base and thirty-one long rays.

Thorax: mesonotum black with faint opalescent bluish reflections and coppery reflections where light strikes it directly. The scutellum is concolorous with the mesonotum, the humeri very dark brown. There are three heavy, stiff, black bristles on the notopleura, three above the wing base, three on the postcalli and three pairs on the scutellar margin, one upon the mesopleura and six before the scutellum. The pile of the mesonotum and of the pleura except the pteropleura and sternopleura is pale yellow. The sternopleural and pteropleural pile is black. Squamae pale yellow with yellow border and orange brown fringe. Plumulae orange brown. Halteres with orange stalk and nearly white knob. *Legs*: quite black with black pile. *Wings*: hyaline, the basal half of the stigmal area light yellow, the marginal cell closed and stalked, the remainder of the wings except the first section of the costal cell quite hyaline without clouding. The wing may have been denuded but there are villi only upon the apex of the marginal cell and the subcostal cell. *Abdomen*: quite black with very faint milky bluish reflections but no coppery or reddish or metallic bluish reflections. The pile is short and yellow upon the basal half of the second, third, fourth and fifth segments. Sternites shining black with long yellow pile, the only black pile being on the posterior margin of the fourth and fifth sternites.

Holotype: female, Pucallpa, PERU, Nov. 12, 1947, Jose Schunke.

***Volucella nigroviridis* n. sp.**

A large black species with orange brown face and bluish green abdomen. Related to *bassleri* Curran. The scutellum is jet black with green reflection on the disc, and not brown in color. Mesonotum entirely deep black pilose. Eyes with reddish pile instead of greyish yellow pile. Length 14 mm.

Male. *Head*: the face and cheeks and front are light orange brown; the pile of the face is thick and short and reddish yellow about the tubercle with some black pile upon the tubercle itself and a narrow row of black pile close to the eye margin. The frontal pile is entirely black. The vertex is black with black

pile. The eyes are densely reddish or orange brown pilose. The upper facets are only slightly enlarged and the eyes touch for a considerable distance. There is a band of distinctly yellow pollen running from each eye margin beneath the antennae. The antennae are yellowish brown, the elongate third segment tapering to a rounded point apically and concave in the middle dorsally. The arista is pale yellow but black on the apical half. There are about thirty-five dorsal rays. *Thorax*: mesonotum black throughout except the humeri which are yellowish brown. All over the disc of the mesonotum and on the jet black scutellum there is a bluish green reflection which is coppery in certain lights. There are about fifteen prescutellar black bristles and eight pairs of long black marginal bristles; there are seven upon the postcalli, three above the wing and four on the notopleura; one upon the mesopleura. Pleura quite black with equally black pile; the squamae are translucent smoky grey with black fringe. The halteres are yellowish with opaque white knob. *Legs*: entirely black with black pile. *Wings*: hyaline but made distinctly grey by the very dense blackish villi. There is a large, blackish sepia quadrate spot in the middle of the wing and beyond it the basal portion of the stigmal area is yellow. The brown spot includes the apex of the costal cell. *Abdomen*: first segment black, the second black with the posterior margin and the whole of the lateral margin metallic bluish green in places with a golden or brassy reflection; where the green meets the black there is a purple reflection. The first segment is white pilose in the middle, black pilose laterally, and the second segment is white pilose on the anterior half throughout the middle but the black posterior pile encroaches laterally almost to the anterior corner. Third and fourth segments entirely metallic blue green with occasional brassy reflection and entirely black pilose. Sternites blue green; second sternite densely long white pilose except on the lateral third. Third and fourth sternites black pilose except for a small patch of yellowish pile antero-medially.

Holotype: male. Pucallpa, PERU, Nov. 8, 1947, Jose Schunke.